

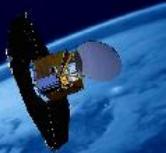


SMR versus MLS CIO

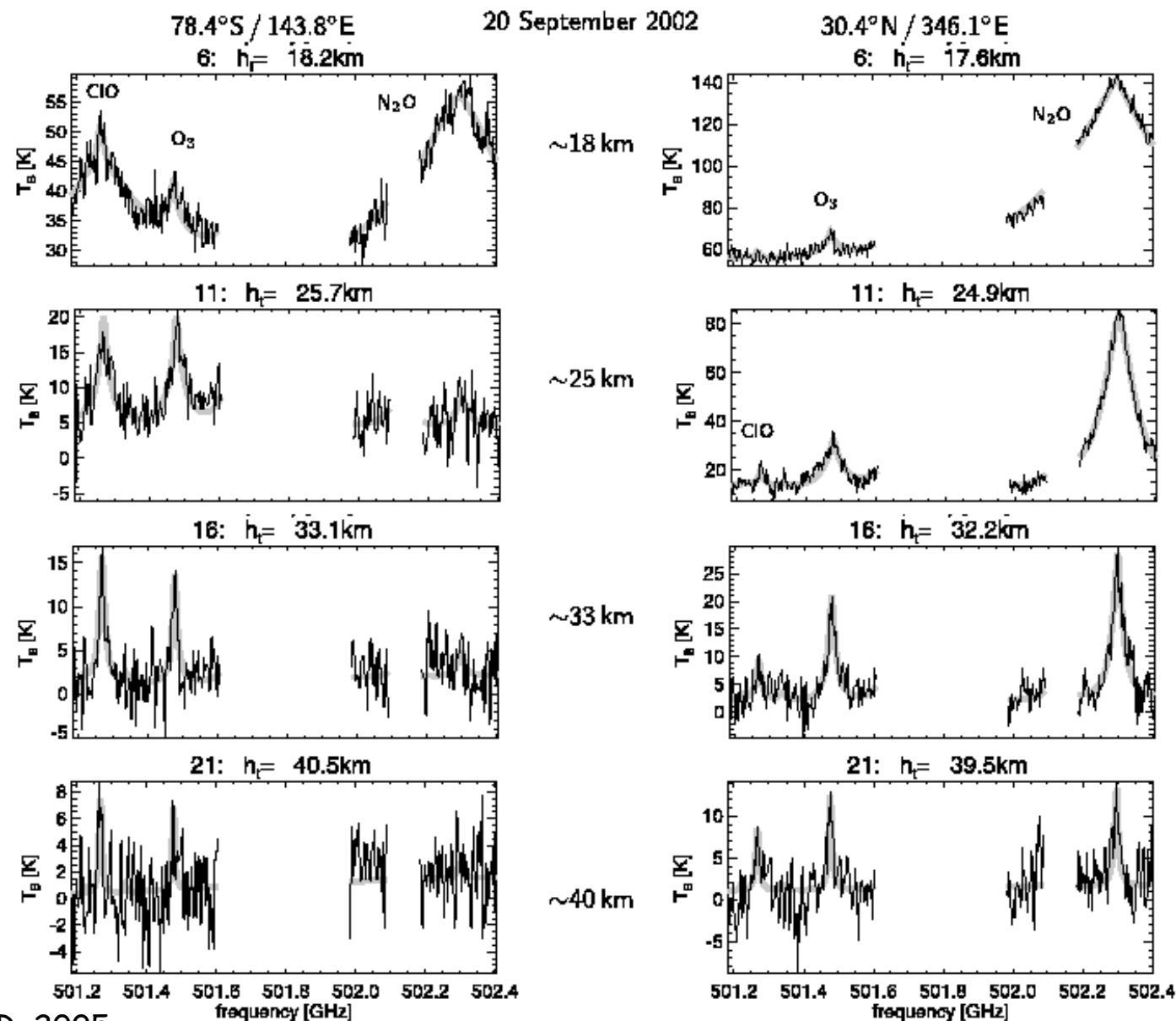
B. Barret, P. Ricaud, E. Le Flochmoën

Laboratoire d'Aérologie / Observatoire Midi-Pyrénées, Toulouse, France



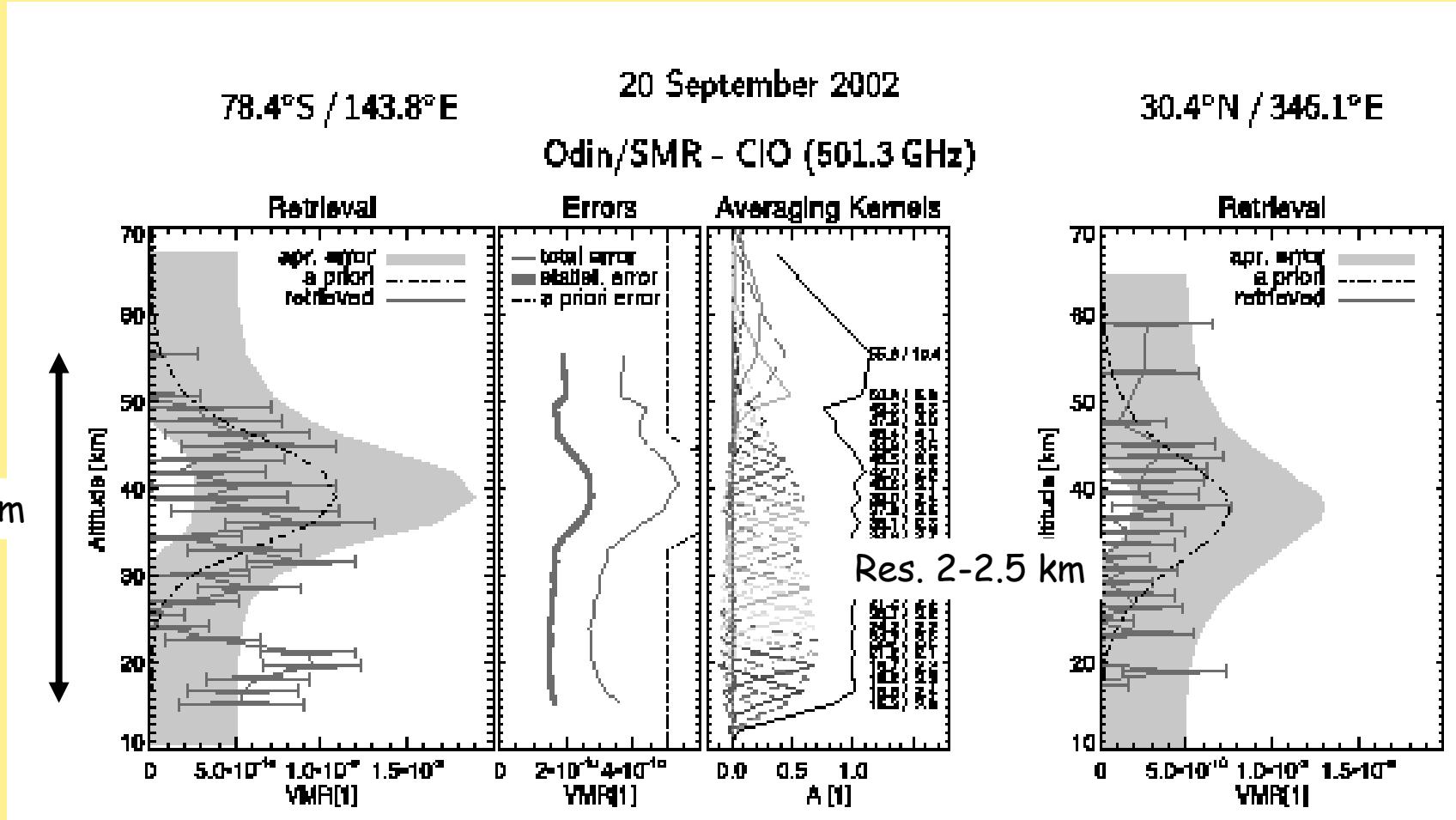


SMR radiances @ 501.8 GHz



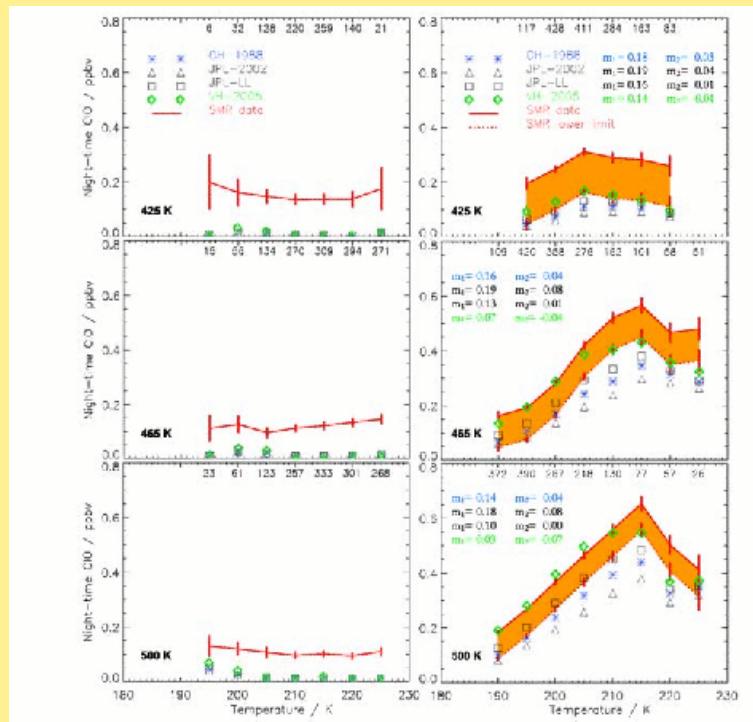
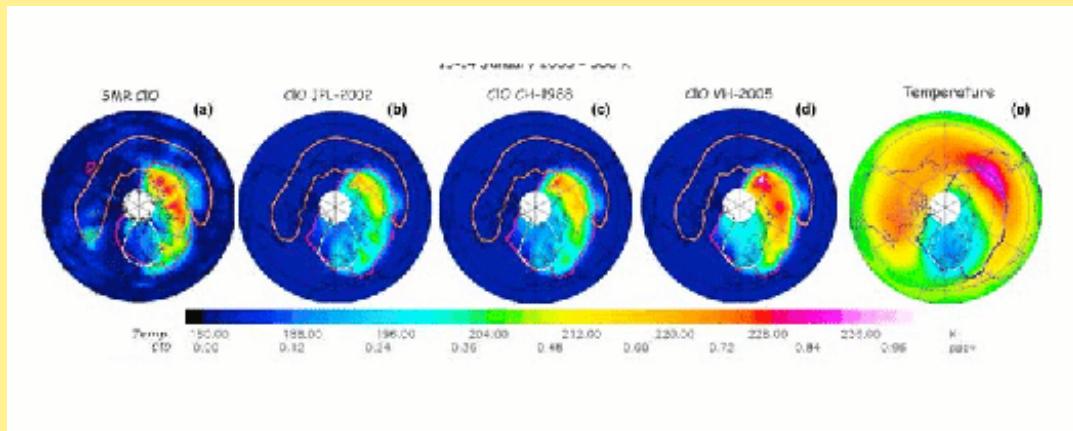


CIO @ 501.3 GHz





Nighttime ClO observations: ClO/Cl₂O₂



ClO/Cl₂O₂ equilibrium

K_{equ} from JPL too strong in the 200/220 K range



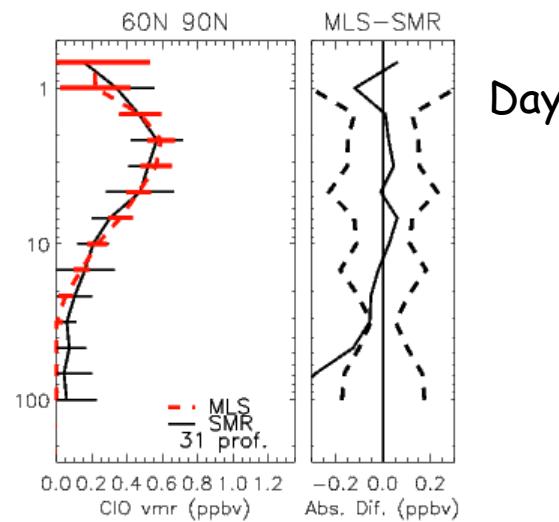
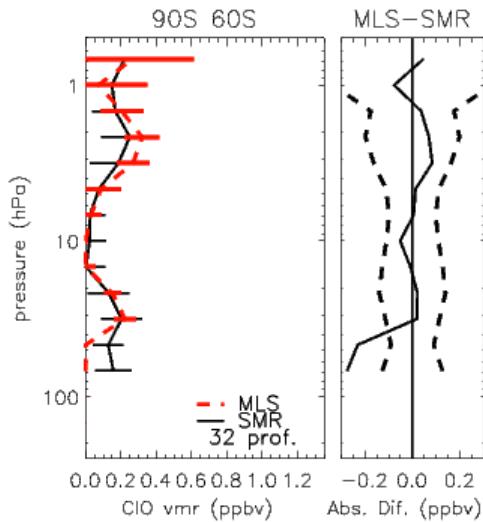
SMR CIO /MLS : selection of data

- **SMR** (ref. code version 222)
 - Measurement response > 0.75
 - Good convergence
- **MLS** (v1.5 L2 data quality and description document)
 - Status = 0 + clouds ($p < 100 \text{ hPa}$)
 - Precision > 0
 - Quality > 2.7
- **Coincidence criteria**
 - Distance < 500 km
 - $\Delta t < 6 \text{ hours}$
 - $\Delta \text{SZA} < 2^\circ \rightarrow$ coincidence at high latitudes (SH and NH) only



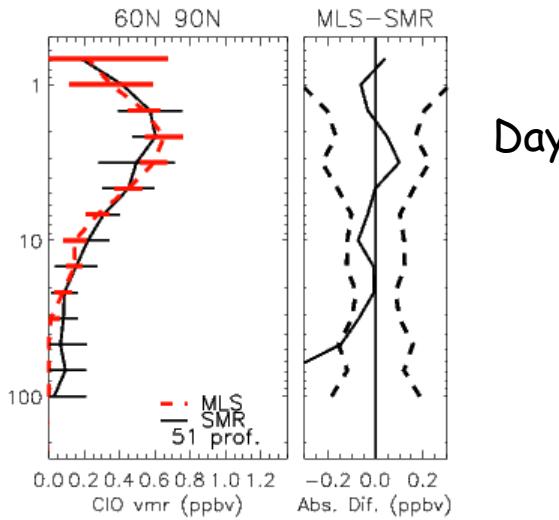
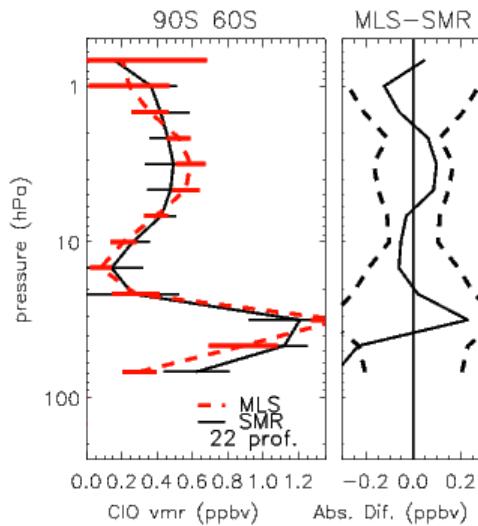
SMR/MLS CIO : zonal means

SMR/MLS CIO 2004_08_2223



SMR 501.3 GHz V222/MLS 640 GHz V1.5

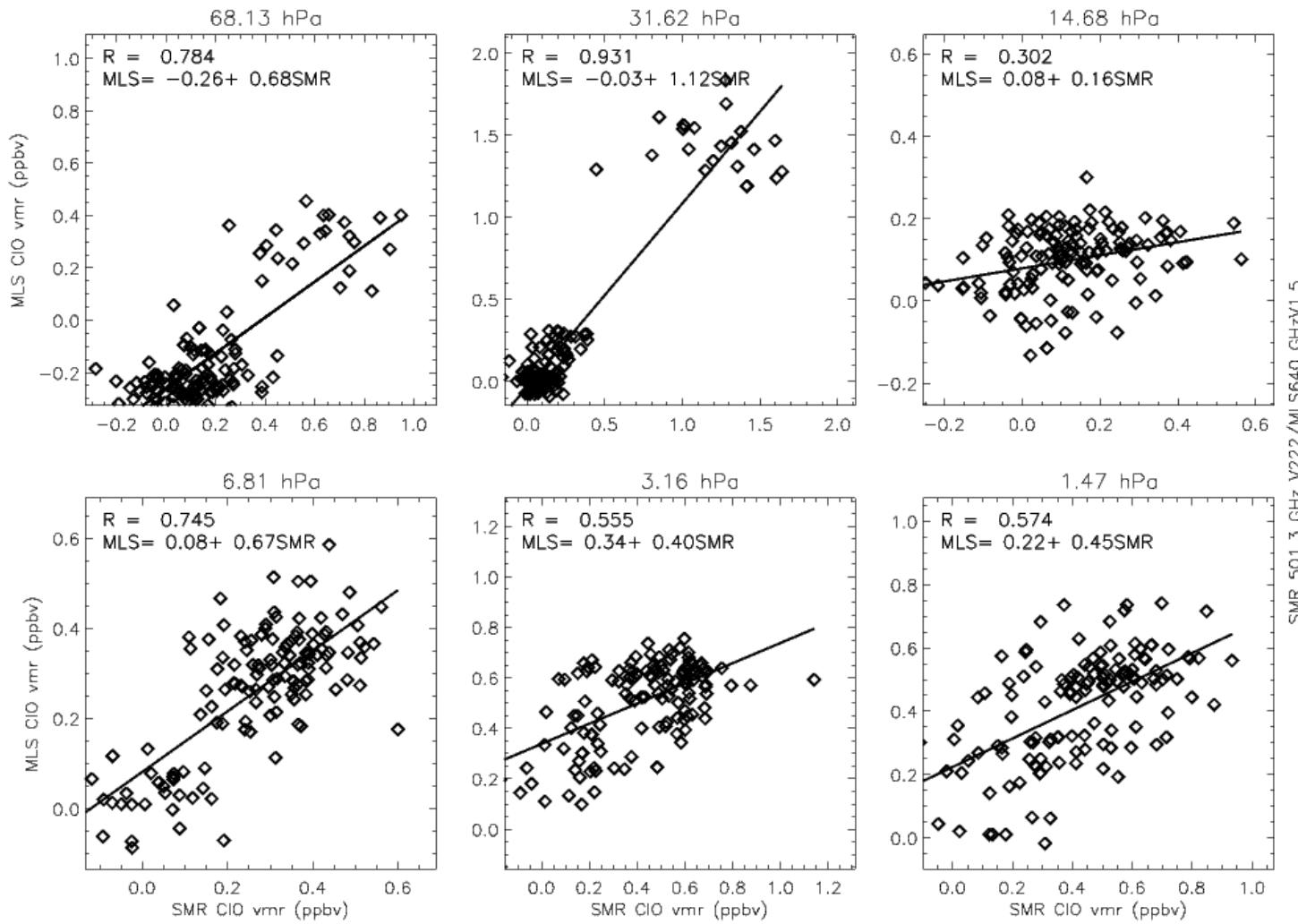
SMR/MLS CIO 2004_09_0607





SMR/MLS CIO: correlations

SMR/MLS CIO 2004_08_2223_09_0607





SMR CIO /MLS : summary

Mean profiles

- Good agreement from 31 to 1 hPa
- MLS < SMR below 31 hPa → bias up to 0.4 ppbv
- SMR noisier than MLS

Correlations

- $R > 0.7$ below and just above the CIO minimum (14.7 hPa)
- Slope MLS/SMR ~ 1 at 31.6 hPa where chlorine activation takes place